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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,773	07/24/2003	Masahiko Sasa	116570	7856

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EXAMINER

HSIEH, SHIH WEN

ART UNIT PAPER NUMBER

2861

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,773

Applicant(s)

SASA, MASAHIKO

Examiner

Shih-wen Hsieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 April 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
7) ☒ Claim(s) 7 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 7-24-03; 2-1-05 (fig. 1 only) is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-20-05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant is advised that the Notice of Allowance mailed is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.
2. The indicated allowability of claims 1-11 is withdrawn in view of the newly discovered reference(s) to Toyohiko (JP 10-305594, from IDS dated April 20, 2005) and Shigeo et al. (JP 03-099857, from Ids dated April 20, 2005). Rejections based on the newly cited reference(s) follow.

Claim Objections

3. Claims 6 and 7 are objected to because of the following informalities:

In regard to:

Claim 6:

Line 1, please change "the ink cartridges" into "the ink cartridge". Because "an ink cartridge" was recited in claim 1 to which claim 6 was indirectly depending on.

Claim 7:

Line 2, please change "the position" to "a position" to correct a minor lack of antecedent basis problem.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 5, 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyohiko (JP 10-305594, from IDS dated April 20, 2005).

In regard to:

Claim 1:

Toyohiko teaches:

An inkjet printer comprising:

a print head (1, figs. 1, 2 and 5) having a plurality of inkjet nozzles (401, fig. 5) arranged in plural columns, refer to [0027] and [0067];

an ink cartridge (10, fig. 1, Toyohiko called it an ink supply container) including an ink accommodation chamber (11, fig. 1, Toyohiko called it an ink pack) having a deformable wall (although Toyohiko does not teach the wall of the ink pack is deformable, apparently, an ink pack of this kind in this invention the wall is flexible so as to be pressurized by applied pressure to maintain the ink in the head under pressure)

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and an air chamber (12, fig. 1, Toyohiko called it an air space) for exerting via the wall air pressure on ink accommodated in the ink accommodation chamber, refer to [0034] and Solution (cover page of Toyohiko);

an ink supply tube (13, fig. 1) connecting the ink cartridge to the print head, refer to [0030];

an air pump (18, fig. 1) for producing pressurized air for changing a state of ink that is located at a tip portion of each of the inkjet nozzles, refer to Solution and [0055];

an air supply tube (19, fig. 1) for guiding the pressurized air to the air chamber of the ink cartridge, refer to [0034]; and

a maintenance unit including a cap (4, figs. 1-3) member for covering the print head, refer to [0040] and [0054];

wherein the maintenance unit opens the cap member in a state that the pressurized air is supplied to the air chamber of the ink cartridge, refer to last three lines in the solution, and [0064].

Claim 9:

An inkjet printer comprising:

a print head having a plurality of inkjet nozzles arranged in plural columns;

an ink cartridge including an ink accommodation chamber having a deformable wall and an air chamber adjoining to the ink accommodation chamber via the wall, the ink accommodation chamber accommodating ink to be supplied to the print head;

an ink supply tube connecting the ink cartridge to the print head;

an air pump for producing pressurized air for changing a state of ink that is

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located at a tip portion of each of the inkjet nozzles;

an air supply tube for guiding the pressurized air produced by the air pump to the air chamber of the ink cartridge; and

a maintenance unit including a cap member for covering the print head in conducting a maintenance of the print head,

wherein the maintenance unit opens the cap member in a state that the pressurized air is supplied to the air chamber of the ink cartridge.

Rejection:

All of the subject matters and limitations in this claim are the same as those in claim 1, and is rejected on the basis as set forth for claim 1 discussed above.

Claim 10:

An inkjet printer comprising:

a print head having a plurality of inkjet nozzles arranged in plural columns;

an ink cartridge accommodating ink to be supplied to the print head;

an ink supply tube connecting the ink cartridge to the print head;

means for covering the print head so as to shut communication of ink that is located at a tip portion of each of the inkjet nozzles with ambient air;

means for producing pressurized air to be supplied to the ink cartridge for changing a state of the ink that is located at a tip portion of each of the inkjet nozzles; and

means for opening the print head so as to communicate the ink that is located at

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a tip portion of each of the inkjet nozzles with the ambient air in a state that the pressurized air is supplied to the ink cartridge.

Rejection:

All of the subject matters and limitations in this claim are the same as those in claim 1, and is rejected on the basis as set forth for claim 1 discussed above.

In this claim, the underlined subject matters indicated above correspond to: cap, pump and numeral 32 in Toyohiko's fig. 1 (for 32, please refer to line 2 of the solution, and [0043] to [0045]).

Claim 11:

A maintenance method in an ink jet printer, wherein the inkjet printer includes a print head having a plurality of ink jet nozzles arranged in plural columns, an ink cartridge accommodating ink to be supplied to the print head, and an ink supply tube connecting the ink cartridge to the print head, the maintenance method comprising:

covering the print head so as to shut communication of ink that is located at a tip portion of each of the ink jet nozzles with ambient air;

producing pressurized air to be supplied to the ink cartridge for changing a state of the ink that is located at a tip portion of each of the ink jet nozzles; and

opening the print head so as to communicate the ink that is located at a tip portion of each of the ink jet nozzles with the ambient air in a state that the pressurized air is supplied to the ink cartridge.

Rejection:

This method claim corresponds to apparatus claims 1, 9 and 10 discussed above, its steps, i.e., covering the head; producing pressurized air and opening the head are taught by Toyohiko and each was rejected as discussed for claims 1, 9 and 10 above.

Claim 2:

Toyohiko further teaches:

wherein the maintenance unit further comprises a wiper member (187, figs. 3 and 5, Toyohiko called it a "height") for wiping over the print head, and the air pump supplies the pressurized air to the air chamber of the ink cartridge since a prescribed time before the cap member opens till the wiper member completes wiping, refer to [0059] to [0072].

Claim 4:

Toyohiko further teaches:

wherein an orifice (16, fig. 1, Toyohiko called it an atmosphere opening valve) for exhausting part of the pressurized air is provided in a vicinity of an air-pump-side end of the air supply tube, refer to S108, fig. 4 and [0059].

Claim 5:

Toyohiko further teaches:

wherein an orifice (16, fig. 1) for exhausting part of the pressurized air is provided in a vicinity of an opposite end of the air supply tube to the air pump, refer to fig. 1 and [0059]. The recitation of this claim actually is the same as that in claim 4, with the exception that the location of the orifice is specifically recited.

Claim 8:

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Toyohiko further teaches:

wherein the print head is located at a position higher than the ink cartridge by a prescribed length, whereby a negative pressure acts on each of the inkjet nozzles of the print head and a concave ink meniscus is formed at a tip of each of the inkjet nozzles, refer to [0030] and fig. 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyohiko.

In regard to:

Claim 3:

The device of Toyohiko DIFFERS from claim 3 in that it does not teach:

wherein the ink cartridge comprises a plurality of ink cartridges that accommodate inks of plural colors, respectively, and are connected in parallel to the air supply tube in a horizontal plane.

Toyohiko teaches a plurality of colors for the ink, refer to [0049] to [0051] and fig.

3.

Since a plurality of color ink were used in Toyohiko's invention, therefore it would have been an obvious matter that a plurality of ink supply containers would have been existed, each accommodates one of the color ink pack, and arranged in a horizontal plan as so as to maintain same level as that was shown in fig. 1 of Toyohiko, refer to [0030].

Claim 6:

The device of Toyohiko DIFFERS from claim 6 in that it does not teach:

wherein the ink cartridge comprises a plurality of ink cartridges arranged in such a manner that an ink cartridge with a higher ink viscosity is located upstream of a flow of the pressurized air from the air pump to the orifice.

As discussed above for claim 3, Toyohiko's invention uses plurality of color ink. Therefore, the plurality of ink cartridges (Toyohiko called ink supply container) for each ink are arranged side-by side in a horizontal plan. Since this arrangement in Toyohiko is the same as that in the instant application, therefore, structurally, it is not differed from that in the instant application with the exception that: "an ink cartridge with a higher ink viscosity is located upstream of a flow of the pressurized air from the air pump to the orifice". This is merely an arrangement of the ink cartridges for the intended use.

Apparatus claim must be structurally distinguishable over the prior art (MPEP 2114). Hence, the arrangement language recites in this claim cannot serve to distinguish over the prior art.

Allowable Subject Matter

8. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claim 7 is the inclusion of the limitation of wherein an inner diameter of the air supply tube decreases as a position goes from the air pump to the orifice. It is this limitation found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

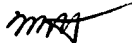
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH


May 24, 2005